

REMARKS

Claims 11 to 28 are pending. Claims 1 to 10 are currently canceled. Claims 12 and 19 are currently amended. Please cancel claims 11 and 26 without prejudice. The amendments are meant to clarify the claims and do not add any new matter or concepts. Furthermore, the Examiner has already stated that he is construing “consisting essentially of” as “comprising” for the purpose of searching for and for applying the prior art under 35 USC 102 or 103 absent a clear indication in the specification or claims of what the basic and novel characteristics actually are. For this reason, the Examiner has already considered the claims as amended and the Applicant respectfully requests that the Examiner enter the claims as they will put the claims in condition for allowance. Reconsideration of the application is requested.

§ 103 Rejections

Claims 11 and 26 stand rejected under 35 U.S.C § 103(a) as purportedly being unpatentable over Masaki et al. (JP 10-077308) in view of Akihiro et al. (JP H2000-230162A1). Claims 11 and 26 have been canceled making this rejection mute.

Claims 11-28 stand rejected under 35 U.S.C. § 103(a) as purportedly being unpatentable over Masaki et al. (JP 10-077308) in view of Akihiro et al. (JP H2000-230162A1) and Moon et al. (US 4,988,742). Claims 11 and 26 are canceled. It is the Examiner’s position that Masaki discloses a flame-retardant adhesive tape comprising acrylic polymers. It is further the Examiner’s position that Masaki discloses halogen free flame-retardant acrylic PSA tape that can be formed from a mixture of (meth)acrylic ester monomer and one or more copolymerizable monomers that is [are] copolymerized with the monomer and that the monomers can be selected from carboxyl group containing monomers and/or nitrogen containing monomers. The Examiner asserts that the difference between the claimed invention and Masaki is that Masaki is silent as to teaching weight % of metal hydrate compound, multilayer adhesive tape, the second PSA is present on at least a portion of both sides of the flame retardant containing PSA layer, and the flame-retardant containing PSA is a foam as claimed. The Examiner relies on Akihiro for the metal hydrate and the amounts of metal hydrate since Akihiro teaches an adhesive that includes ammonium polyphosphate and aluminum hydroxide (metal hydrate). The Examiner asserts that

it would have been obvious to a PHOSITA at the time the invention was made to add the flame resistant component such as ammonium polyphosphate and aluminum hydroxide (metal hydrate) in the amount taught by Akihiro in the adhesive of Masaki, motivated by the desire to further enhance the flame-resistance characteristics of the adhesive tape of Masaki and provide an adhesive tape having excellent adhesion. The Examiner also admits that Masaki as modified by Akihiro is silent as to teaching a multilayer adhesive. However, the Examiner points to Moon as disclosing a multilayer adhesive although Moon is silent as to teaching halogen in his adhesive tape. The Examiner notes that Applicant's presently claimed invention does not exclude a PSA tape wherein both adhesive layers are formed of [the]same acrylic polymer. The Examiner states [F]urther, "If an applicant contends that additional steps or materials in the prior art are excluded by the recitation of "consisting essentially of", applicant has the burden of showing that the introduction of additional steps or components would materially change the characteristics of applicant's invention".

The Applicant respectfully traverses for at least the following reasons. Independent claims 12 and 29 have been amended as noted above to reinstate the transitional phrase "comprising" for "consisting essentially of" for the first pressure-sensitive adhesive layer of each claimed tape. The Examiner has already construed these transitional phrases as "comprising" as stated above. Only the second pressure-sensitive adhesive layer of each tape retains the "consisting essentially of" transitional phrase. With respect to claims 12 and 19, the second pressure sensitive adhesive layer consists essentially of an acrylic polymer containing units derived from a second mixture consisting essentially of an alkyl(meth)acrylate monomer and a carboxyl group-containing monomer (claim 12) or a nitrogen-containing monomer (claim 19). It is important to note that in the tapes of claims 12 and 19, the "adhesive surface of the pressure-sensitive adhesive sheet or tape does not have a flame retardant due to the presence of the second pressure-sensitive adhesive layer (see page 3, lines 18-20 of the specification as filed). Thus, the second pressure sensitive adhesive is the one used to bond to other surfaces since it constitutes the adhesive surface.

The Applicant asserts that metal hydrate should be excluded from the second pressure sensitive adhesive for at least the following reason. The Applicant further asserts that the basic and novel characteristics of Applicant's claimed invention is "a flame-retardant pressure-

sensitive adhesive sheet or tape having adequate adhesive performance without containing a halogen-based flame retardant.” (see page 2, lines 28-30 of the specification as filed). The Examples (see Table 1 on page 22 of the specification as filed) show that metal hydrate changes the adhesion characteristics of the Applicant’s invention and thus should be excluded from the second pressure sensitive adhesive layer (the one used to bond to another surfaced) in claims 11 and 19. For example, Comparative Example 2 is a single layer of an alkyl acrylate and a carboxyl-containing acrylate with metal hydrate. It has a very low shear holding value of 280 minutes and a low peel strength of 8 N/cm (to stainless steel). The same is true of Comparative Example 1 which is a single layer of an alkyl acrylate and a nitrogen-containing acrylate with metal hydrate. It also has a low shear holding value of 130 minutes and a peel strength of 6 N/cm (to stainless steel). However, Example 2 has an outer layer (exposed layer) of an alkyl acrylate and a carboxyl-containing acrylate with no metal hydrate and has a shear holding value of greater than 5000 minutes and a peel strength of 21 N/cm. Similarly, Example 4 has an outer adhesive layer that has an alkyl acrylate and a carboxyl-containing monomer with no metal hydrate and it also has a high shear holding value of greater than 5000 minutes with a peel strength of 20 N/cm. Therefore, metal hydrate has a deleterious effect on the adhesive performance and as such alters the basic characteristics of the adhesive. As a result, the Applicant asserts that due to the “consisting essentially of” transitional phrase in the second pressure-sensitive adhesive and the above date, Akihiro should be excluded as a reference since it includes metal hydrates. Additionally, by using a multi-layered adhesive with no metal hydrate on the outer surface and a combination of a basic monomer mixture in one layer with an acidic monomer mixture in the other layer the Applicant has made a non-halogen containing flame-retardant pressure-sensitive adhesive tape with high adhesion and holding strength and good flame retardation. The combination of a basic acrylic adhesive and an acidic acrylic adhesive layer causes adequate inter-layer adhesion without having to provide a primer layer and prevents the occurrence of inter-layer destruction as taught on page 4, lines 7-10 of the specification. The Applicant respectfully asserts that these are new and unexpected results. Since Akihiro is now excluded as a reference for Applicant’s claims 12 and 19, the rejection is improper and should be withdrawn.

Claims 13-18 and 27 depend upon claim 12 and add further limitations thereto. Since claims 12 is now patentable, likewise so are claims 13-18 and 27. Claims 20-25 and 28 depend upon claim 19 and add further limitations thereto. Since claim 19 is now patentable, likewise so are claims 20-25 and 28.

The rejection of claims 12-25 and 27-28 under 35 U.S.C. § 103(a) as purportedly being unpatentable over Masaki et al. (JP 10-077308) in view of Akihiro et al. (JP H2000-230162A1) and Moon et al. (US 4,988,742) has been overcome and should be withdrawn.

In view of the above, it is submitted that the application is in condition for allowance.

Examination and reconsideration of the application as amended is requested.

Respectfully submitted,

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